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IAX0583 Programming 1

Airport Statistics

Homework II

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Declaration of originality:

I hereby certify that I am the sole author off this thesis and no part of this thesis has been published or submitted for publication. All works and major viewpoints of the other authors, data from other sources of literature and elsewhere used for writing this paper have been referenced.

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The Task

SUBJECT: Airport

A two-dimensional array (matrix) is provided, with rows of flights per week to different destinations, and the columns correspond to the airlines that offer these flights. Maximum matrix size is 15x15 elements.

Create a program that will find the amount of flights for each airline and the most active airline.

Use the features in the solution:

- Read the matrix.
- To display flight information (see example).
- For calculating and issuing the amount of flights for each airline (NB: Summarize the data in the COLUMN).
- Find and deliver the most trusted airline.

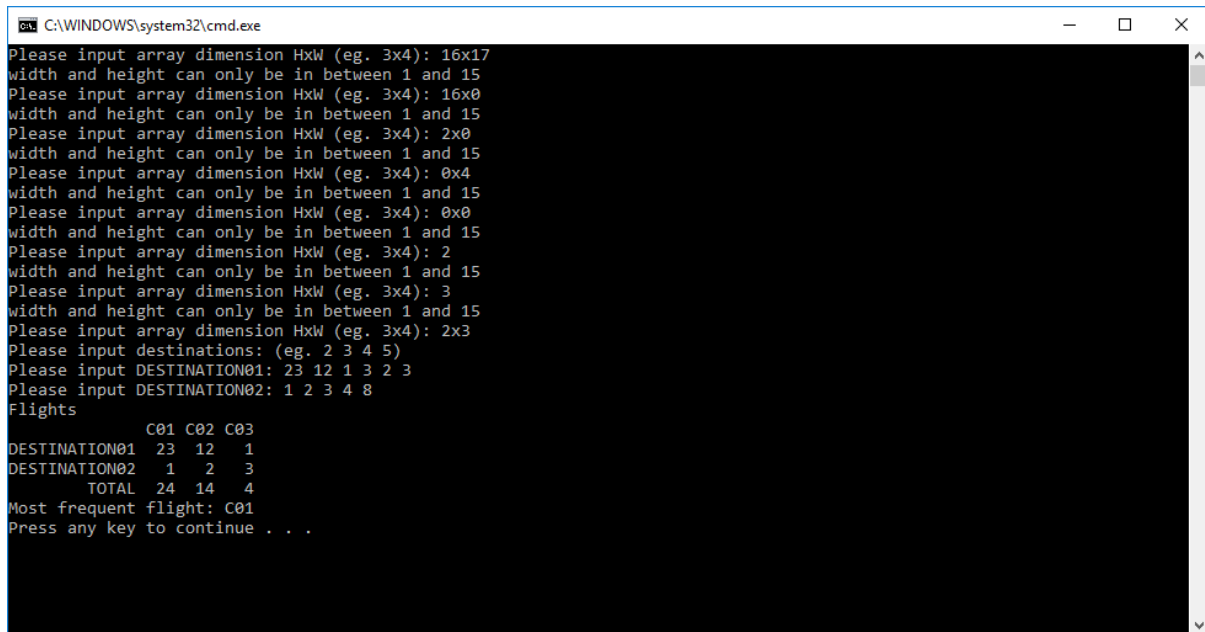
Explanation of the program:

The program is created to input calculate the most frequent/active flight.

The program does the following:

- asks the user to input the size of a 2d array(with format MxN) of any size not more than [15x15] and greater than [0x0]
- passes the user input through a series of checks(if (w > 15 || w <= 0 || h > 15 || h <= 0)) to ensure the first conditions have been satisfied
if the condition is not satisfied(i.e if the corresponding input for rows and couluns exclude numbers 1 to 15) then the program prints “width and height can only be in between 1 and 15”
- uses another condition/loop(while (w > 15 || w <= 0 || h > 15 || h <= 0)) to fill in the array rows daily(1 2 3 4 ...). Where the individual input represent the corresponding number of flights for a particular airline on that day. **Note: if the number of inputs of flights per day excludes the number of columns, the extra values will be neglected.**
- automatically assumes the value ‘0’ if there is no input for the number of flights for an airline
- totals all the inputs of flights for each airline in that week
- Finally, the program calculates the largest number representing the Most Active flight from the totals.

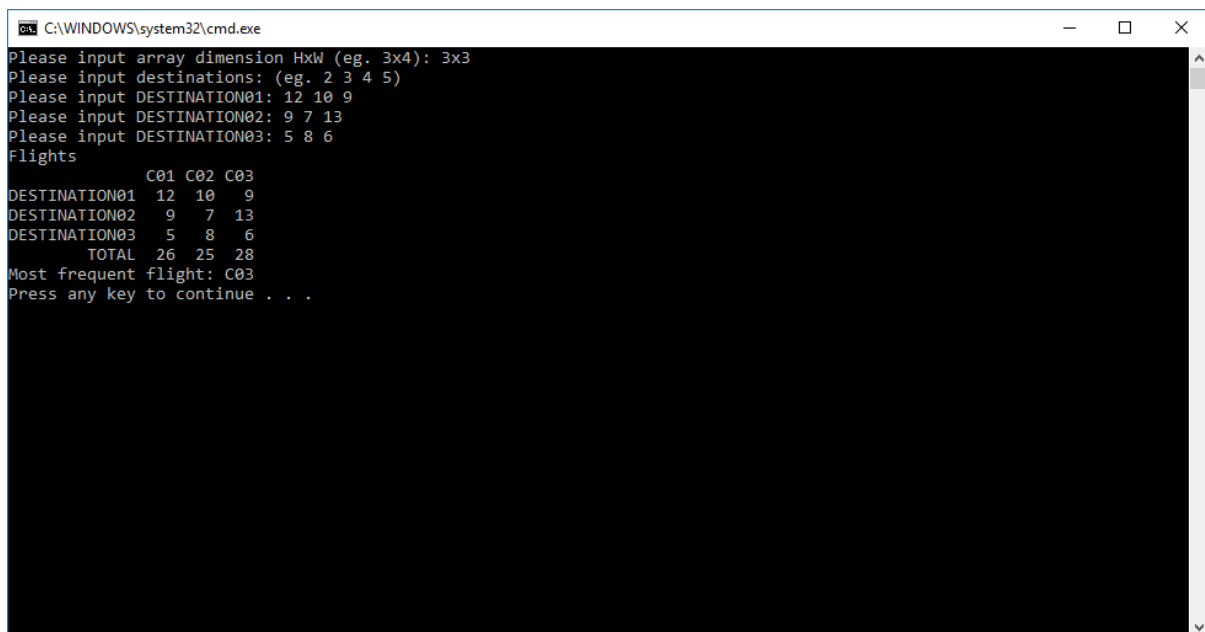
OUTPUT (Screenshots):



```
C:\WINDOWS\system32\cmd.exe
Please input array dimension HxW (eg. 3x4): 16x17
width and height can only be in between 1 and 15
Please input array dimension HxW (eg. 3x4): 16x0
width and height can only be in between 1 and 15
Please input array dimension HxW (eg. 3x4): 2x0
width and height can only be in between 1 and 15
Please input array dimension HxW (eg. 3x4): 0x4
width and height can only be in between 1 and 15
Please input array dimension HxW (eg. 3x4): 0x0
width and height can only be in between 1 and 15
Please input array dimension HxW (eg. 3x4): 2
width and height can only be in between 1 and 15
Please input array dimension HxW (eg. 3x4): 3
width and height can only be in between 1 and 15
Please input array dimension HxW (eg. 3x4): 2x3
Please input destinations: (eg. 2 3 4 5)
Please input DESTINATION01: 23 12 1 3 2 3
Please input DESTINATION02: 1 2 3 4 8
Flights
      C01 C02 C03
DESTINATION01 23 12 1
DESTINATION02  1  2  3
      TOTAL 24 14 4
Most frequent flight: C01
Press any key to continue . . .
```

Sample of output with incorrect user input

Notice: the extra values (3 2 3 and 8) of user input 'DESTINATION:' were ignored in the output.



```
C:\WINDOWS\system32\cmd.exe
Please input array dimension HxW (eg. 3x4): 3x3
Please input destinations: (eg. 2 3 4 5)
Please input DESTINATION01: 12 10 9
Please input DESTINATION02: 9 7 13
Please input DESTINATION03: 5 8 6
Flights
      C01 C02 C03
DESTINATION01 12 10 9
DESTINATION02  9  7 13
DESTINATION03  5  8  6
      TOTAL 26 25 28
Most frequent flight: C03
Press any key to continue . . .
```

Program output with correct values input.